PS 8340.07 QUALITY PROGRAM MANUAL

U.S. Department of Justice
Federal Bureau of Prisons

Program Statement

OPI: FPI
NUMBER: 8340.07
DATE: 1/14/2000
SUBJECT: Quality Program Manual

1. **PURPOSE AND SCOPE**. To establish quality standards, guidelines, and corporate procedures in Federal Prison Industries (FPI) which conform to the requirements of American National Standard, Quality Systems-Model for Quality Assurance (ANSI/ISO/ASQC Q9002) in Production, Installation, and Servicing.

FPI quality systems will be designed to collect quality related data and use it to:

- improve operations,
- reduce costs,
- increase reliability, and
- provide total customer satisfaction.

2. **PROGRAM OBJECTIVES.** The expected results of this program are:

a. FPI Quality Systems will conform to American and International quality assurance standards.

b. The quality of FPI products and services will meet or exceed customer expectations.

c. The cost to FPI of repairing or replacing products will be minimized.

d. Quality-related data will provide continuous improvement of FPI products, services, and operations.

3. **DIRECTIVES AFFECTED**

a. **Directive Rescinded**

PS 8340.03	UNICOR Quality Assurance Program, (10/11/94)

b. **Directives Referenced**

PS 1210.18	Management Control and Program Review Manual (12/22/97)
PS 3906.16	Employee Development Manual (3/21/97)
PS 8000.01	UNICOR Corporate Policies and Procedures Manual (5/13/81)
PS 8510.01	Factory Costing Procedures (11/21/97)
PS 8264.01	Product Design Control (3/6/98)
PS 8270.02	UNICOR Customer Service Center Manual (2/18/98)

4. **STANDARDS REFERENCED**

a. American Correctional Association 3rd Edition Standards for Adult Correctional Institutions: 3-4405

b. American Correctional Association 3rd Edition Standards for Adult Local Detention Facilities: 3-ALDF-5A-16

c. ANSI/ISO/ASQC Q9002, American National Standard - Quality Systems - Model for Quality Assurance in Production, Installation, and Servicing

d. ANSI/ASQC Z1.4-1993, American National Standard, Sampling Procedures and Tables For Inspection By Attributes

/s/
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Director

TABLE OF CONTENTS

1.0 MANAGEMENT RESPONSIBILITY

1.1. QUALITY POLICY

Federal Prison Industries (FPI) takes great pride in teaching inmates good work ethics and marketable job skills in order to provide our customers with high quality goods and services priced competitively and delivered on time. We are committed to complete and continual customer satisfaction.

Three core principles form the foundation of FPI's quality policy:

- Ultimately, it is the customer who decides whether an item is of acceptable quality. Every effort will be undertaken to ensure total customer satisfaction, even if in the short run, it may cause extra cost for the Corporation.

- Quality must be built into FPI's products and services. This is accomplished primarily through clearly defined and well-designed processes and effective training of staff and inmates.

- Quality is everyone's responsibility. Everyone is expected to improve operations continuously to provide the highest quality of products and services at the lowest possible cost.

1.2 ORGANIZATION

1.2.1. Responsibility and Authority

The Chief of Quality and Productivity is responsible for the Corporate Quality Program and maintenance of Corporate Quality Policies and Procedures.

The Corporate Quality Manager, under the direction of the Chief of Quality and Productivity administers the Corporate Quality Program and provide technical advice and assistance to other FPI staff in matters related to quality.

The Associate Warden/Superintendent of Industries (AW/SOI) is responsible for the overall integrity of the Quality System at his or her location.

- The AW/SOI is responsible for ensuring that the duties and responsibilities outlined in the local procedures manual are well defined and understood by all staff under their direction.

The AW/SOI will delegate one position to be responsible for implementing and managing the Quality System.

- Regardless of official title, this position will be identified throughout this Manual as the Quality Manager.

The AW/SOI has the authority to delegate any Factory Manager duties identified in this policy to other staff except as noted below. When applicable, delegation of these duties must be identified in the local Quality Procedures Manual.

- These duties may not be delegated to the Quality Manager or Quality Specialists.

An effective Quality System involves all personnel, Central Office and field, who manage, perform, or verify work affecting quality. Each individual is responsible for understanding and following the work instructions or procedures for his or her particular process and can exercise the freedom and authority to initiate action to prevent the occurrence of any non-conforming product, process, and quality system. The Quality Manager has the authority and responsibility to:

- Identify and record any problems related to the product, process, or quality system.

- Provide assistance to develop solutions to identified problems and verify implementation and the results of these solutions.

- Prevent further processing or shipment of nonconforming products until the deficiency or unsatisfactory condition has been corrected.

- Elevate any dispute concerning product quality between the Quality Manager and the AW/SOI which cannot be resolved at that level to the Corporate Quality Office for resolution.

- Prepare quality plans.

1.2.2. Resources. FPI conducts numerous verification activities to control nonconforming products. The local Quality Manager will provide training and the necessary equipment to carry out testing and inspection. These activities are normally completed by persons not directly involved in the work performed. If an individual must inspect his or her own work, objective criteria will be established in the form of inspection instructions and audit checklists.

- The AW/SOI is responsible for identifying and providing adequate resources, including the assignment of trained personnel, for management, performance of work, and verification activities, including internal quality audits.

1.2.3. Management Representative. The Quality Manager at each FPI operation has the authority and responsibility to:

- Ensure that the local quality system is established, implemented, and maintained in accordance with this Manual and ANSI/ISO/ASQC Q9002, American National Standard.

- Routinely report on the performance of the Quality System to the AW/SOI for review and as a basis for improving the Quality System.

1.3. MANAGEMENT REVIEW

1.3.1. Program Review. A formal review of the quality system at each FPI location is conducted annually in accordance with the Program Statement on Management Control and Program Review.

- These program and operational reviews are designed to ensure the continuing suitability of the quality system and effectiveness to satisfy the requirements of the Corporate quality policy and objectives.

1.3.2. Internal Audit. Audits will be conducted as described in Section 17 of this Manual.

1.3.3. Monthly Review. The Quality Manager is to prepare a monthly Quality Activity Report and attend the monthly Operations/Financial Review meetings to discuss any significant quality concerns identified in the report. This report will include an analysis of quality data as outlined in Section 20.2. to include:

- Defect frequency analysis.

- Analysis of scrap and rework costs by defect category.
- Customer complaint summary.

The report will identify any discernable quality trends and will report the status of any ongoing corrective actions. Copies of the report will be distributed to all factory staff.

2.0 QUALITY SYSTEM

2.1. GENERAL

FPI's quality system is designed to ensure that our products, processes, and services conform to specified requirements.

Documents to support the quality system include:

- The Quality Program Manual defines the infrastructure and establishes Corporate procedures and minimum requirements for FPI's quality systems.

- The Quality Procedures Manual is a local document developed and maintained by the Quality Manager and approved by the AW/SOI. This document identifies the specific requirements of the local quality system.

- Work instructions will be prepared for all processes affecting quality. Preparation of work instructions will be the responsibility of the Department Head in charge of each process with the Quality Manager's approval.

- Inspection records will be maintained in accordance with this policy and local Quality Procedures Manuals to document conformance to the quality system.

2.2. QUALITY SYSTEM PROCEDURES

Detailed quality procedures, consistent with ANSI/ISO/ASQC Q9002, American National Standard and this Manual are to be documented in the local Quality Procedures Manual. The range and detail of these procedures depend on:

- the complexity of the work,
- the methods used, and
- skills and training needed by personnel performing the work.

The local Quality Procedures Manual is to include:

- Organization Chart

- Factory layouts with identified inspection points

- Defined responsibilities for supervision of inspection activities, (e.g., in-process inspection may be placed under the supervision of production staff).

- Identification of specific inspection documents (forms, tags, records, etc.) used to document conformance to quality requirements. These will include the minimum documents required by this Manual and any others local management determines to ensure the quality system's integrity and effectiveness.

- Any other requirements identified in the various sections of this Manual.

2.3. QUALITY PLANNING

Methods for verifying quality requirements will be defined and documented with written quality plans for all products and services. When groups of products or services are similar, they may be included under a single quality plan. These may be in the form of a narrative description or process flow chart including all work processes and inspection points.

The development of quality plans should consider:

- The identification and acquisition of any controls, processes, equipment (including inspection and test equipment), fixtures, resources and skills that may be needed to achieve the required quality.

- Ensuring the compatibility of the production process, installation, servicing, inspection and test procedures, and the applicable documentation.

- The updating, as necessary, of quality control, inspection, and testing techniques, including the development of new instrumentation.

- The identification of any measurement requirement involving capability that exceeds the known state of the art, in sufficient time for the needed capability to be developed.

- The identification of suitable verification at appropriate stages in the manufacture of a product.

- The clarification of standards of acceptability for all features and requirements, including those which contain a subjective element.

- The identification and preparation of quality records.

3.0 CONTRACT REVIEW

3.1. GENERAL

Each factory will establish and maintain procedures for Customer Contract/Order Review, and the coordination of those activities. These procedures will be documented in the local Quality Procedures Manual.

3.2. REVIEW

Upon receiving Customer Contracts/Orders, the Factory Manager and Quality Manager is to:

- Review the legibility and completeness of all documents, including drawings and technical data packages.
- Ensure all requirements are adequately defined and documented.
- Assure the factory has the capability to meet all manufacturing and quality requirements.

Any discrepancies must be resolved with the customer through the Customer Service Center or the Program Manager, with technical assistance as needed from the Product Support Center.

3.3. AMENDMENT TO A CONTRACT

All required amendments or changes to contracts or orders must be approved by the procuring activity. This will be done by a contract modification, amended order, or documented communications received from the procuring activity’s contracting officer or customer’s representative.

The local Quality Procedures Manual must identify how these amendments are communicated to appropriate personnel.

3.4. RECORDS

Records of contract review will be maintained. The format of these records will be defined in the local Quality Procedures Manual.

4.0 DESIGN CONTROL

The scope of ANSI/ISO/ASQC Q9002, American National Standard does not include quality system requirements for design control. Design of FPI products will be in accordance with customer controlled or Product Support Center (PSC) drawings and specifications. Design control requirements are governed by the Program Statement on Product Design Control.

5.0 DOCUMENT AND DATA CONTROL

5.1. GENERAL

This procedure describes the necessary controls required to assure that the latest applicable documents and data are used for fabrication, inspection, and testing. The following are examples of the types of documents and data requiring control.

- Drawings and Specifications (PSC or customer controlled)
- Inspection Instructions/Test Procedures
- Standard Operating Procedures/Work Instructions
- Quality Manuals and Procedures

Specific procedures for controlling these documents will be established and maintained locally and documented in the local Quality Procedures Manual.

The Factory Manager is responsible for maintaining control of all approved drawings and specifications, work instructions and standard operating procedures. The Quality Manager is responsible for maintaining control of all approved inspection instructions, test procedures, and quality manuals and procedures.

5.2. DOCUMENT AND DATA APPROVAL AND ISSUE

5.2.1. Initially upon quotation, or upon receipt of a customer's order if there is no quote, the Factory Manager is to obtain the appropriate drawings and specifications. A master copy of these drawings and specifications is to be maintained in a designated location to ensure appropriate control.

Upon receiving a solicitation, the Factory Manager will inspect each drawing package to ensure that it is complete, each drawing is legible, and the proper revisions are on hand. Any inconsistencies within each element must be corrected immediately.

The Factory Manager is to repeat the drawing package inspection upon receipt of contracts or delivery orders to ensure no revisions or changes have taken place.

5.2.2. The Factory Manager is responsible for maintaining and controlling a master copy of the latest process instructions and will inspect each set of instructions to ensure they are legible and complete. All process instructions will contain approval signatures of the Factory Manager and Quality Manager.

The Quality Manager is responsible for maintaining and controlling a master copy of inspection instructions and test procedures to ensure that they are legible and complete.

- The Quality Manager is to sign any inspection instructions and test procedures issued to the floor.

5.2.3. Both the Factory Manager and Quality Manager are to establish and maintain a master list or equivalent document control procedure identifying the current revision status of all documents to ensure that only approved documents are released to the production floor.

These control procedures will ensure:

- Appropriate documents are available where needed.

- Invalid or obsolete documents are removed from all points of issue or use.

- Any obsolete documents retained for legal or historical purposes are clearly marked **"Obsolete,"** removed from the production floor, and secured appropriately to prevent their unintended use. Documents no longer in use due to completion of a contract are to be secured appropriately, but do not need to be marked **"Obsolete."**

5.3. DOCUMENT CHANGES AND MODIFICATIONS

Upon receiving drawing or specification revisions from the issuing activity or contract modifications from the customer, the Factory Manager and Quality Manager will review the document to determine the effect on existing instructions and procedures and approve any required changes. The documented control procedures identified in Section 5.2.3 will include steps to recall, revise, and re-issue any documents impacted by these revisions/modifications.

6.0 PURCHASING

6.1. GENERAL

The following procedures are established to ensure that materials and services received from FPI's vendors conform to specified requirements.

6.2. EVALUATION OF VENDORS

The Contracting Officer is responsible for evaluation and selection based on quality, delivery, price, and other relevant capabilities. The process for selecting vendors and the types of controls placed upon them is governed by the UNICOR Acquisition Policy (UAP) and the Federal Acquisition Regulation (FAR).

6.3. PURCHASING DATA

6.3.1. Individuals authorized to generate Requests for Purchase (RFP) and Request for Contract Actions (RCAs) will ensure that they include a complete item description (type, class, style, grade, etc.) of the required products or services; specification or drawing number, if applicable; reasonable delivery dates; and any applicable clauses to establish the extent of control exercised over the vendor.

These may include:

(1) Clause A. If a Certificate of Conformance is required, the RFP will include this statement:

> **"With the original invoice the vendor will furnish the original Certificate of Conformance which will be signed by the person who has certification authority with their title and position included. A copy of this Certificate of Conformance and the packing slip will accompany each shipment. The furnishing of the Certificate of Conformance will be a condition of acceptance at a destination, and payment will not be made until it is received. Inspection and acceptance will be at destination by FPI."**
>
> — Upon receipt of material, FPI must perform normal inspection and testing to assure compliance with contractual requirements.

(2) Clause B. If an Acceptable Suppliers List Certificate is required, the RFP will include this statement:

> **"Inspection and acceptance will be at destination by Federal Prison Industries. The original Acceptable Suppliers List (ASL) certificate will be furnished with the original invoice. The ASL certificate must have the same format and information as shown on exhibit "d" of Quality Systems Requirements, Defense Personnel Support Center (DPSCM) 4155.3. A copy of the ASL certificate will be a condition of acceptance at destination. Test results, performed on lots of materials supplied against this order, are to be available for review by Federal Prison Industries, or other government representative. Test results will be supplied to FPI upon request."**

— Unless otherwise specified, clause B will be invoked if the vendor is listed in the Acceptable Suppliers List (ASL) for textiles procurement.

(3) Clause C. If a test report is required, the RFP will contain the following statement:

> **"A test report of all required tests will be furnished to FPI. The portion relating to the contractor will be completed by the Quality Department of FPI. The original test report will be furnished with the original invoice. A copy of the test report and packing slip will accompany each shipment. The furnishing of the test report will be a condition of acceptance at destination, and payment will not be made until it is received. Inspection and acceptance will be at destination by FPI."**

— Clause C will be invoked if a test report is required to ensure conformance to specifications, or when DPSCM 4155.3 is imposed and the total cost of a component exceeds $15,000.

(4) Clause D. If a Certified Test Report for Gauging is required, the RFP will include this statement:

> **"Connectors will be gauged using applicable government furnished gauges and specifications. Certified test results will be furnished with each shipment identifiable to lot or order number and quantity purchased on each lot or order number."**

— Clause D will be imposed on all connectors that have

gauging test data requirements in the contract.

(5) Clause E. If Government Source Inspection is specified, the RFP will include the following statement:

> **"Government inspection is required prior to shipment from your plant. Upon receipt of this order, promptly notify the government representative who normally services your plant so that appropriate planning for government inspection can be accomplished. Such inspections can only be requested by or under authorization of the government representative. If testing is required, the following statement should be included on the RFP: "The vendor will furnish space, test equipment and manpower to complete all required tests."**

(6) Clause F. If inspection and testing at the vendors manufacturing facility by FPI are required, the RFP will include the following statement:

> **"FPI has the right to inspect and test all supplies called for by this contract, to the extent practicable, at all places and times, including the period of manufacture and in any event before acceptance. FPI will perform inspections and tests in a manner that will not unduly delay the work. If FPI performs inspection or tests on the premises of the vendor or sub-vendor, the vendor will furnish and will require subvendors to furnish, without additional charge, all reasonable facilities and assistance for the safe and convenient performance of these duties."**

6.3.2. The Quality Manager will review and approve all RFPs and RCAs for materials and services which directly affect the quality of finished products to assure they meet all contractual and FPI requirements.

6.3.3. The Contracting Officer or Credit Card holder (credit card purchases) will assure that the RFP or RCA has been approved by the Quality Manager when applicable and the purchase order or contract contains all requirements and specifications noted on the approved RFP.

6.4. VERIFICATION OF PURCHASED PRODUCT

When Clause F is invoked, the Purchase Order will specify verification arrangements and method of product release. When customer verification of purchased materials is required, Contract Clause E will be included in the Purchase Order.

- Verification by the customer will not absolve the vendor of the responsibility to provide an acceptable product, nor will it preclude subsequent rejection by the customer.

7.0 CUSTOMER SUPPLIED PRODUCT

7.1. GENERAL

The following procedures are established to control the verification, storage, and maintenance of customer supplied products which are provided to FPI for use on a contract or order. The customer supplied products which are provided by a civilian sector customer will be identified as ?**Customer Supplied Products**? **(CSP)**, and customer supplied products which are provided by the government will be identified as ?**Government Furnished Materials**? **(GFM)** and will be referred to as such throughout these procedures.

7.2. VERIFICATION

All items received and verified to be CSP and GFM will be promptly processed by the receiving inspector and identified with a tag or label indicating CSP or GFM in bold lettering and the contract number for which it is used.

- All item discrepancies will be reported immediately in writing to the supplier and the responsible Government Quality Assurance Representative (QAR) for verification and disposition instructions when applicable.

The Shipping and Receiving Supervisor will prepare and issue a receiving report or miscellaneous receipt adequately describing the CSP and GFM received and showing the manufacturer's:

- part number,
- NSN (if applicable),
- receiving document number,
- quantity,
- condition,
- damage description (if applicable),
- location of storage,
- date received,
- who received the item(s), and
- the contract or purchase order number.

In addition to the above data, the equipment's serial or identification number and model number are required for Government Furnished Test Equipment (GFTE). The applicable Receiving Report will be annotated as CSP or GFM.

7.3. STORAGE AND MOVEMENT

The Warehouse Supervisor will store the CSP and GFM indoors in a clean, dry area adequately protected and designated by a prominent CSP or GFM marking. All movement of property to and from this area will be authorized by the Factory Manager or his/her designee, supported by proper documentation such as a CSP or GFM receiving report or requisition.

7.4. MAINTENANCE

A physical inventory of CSP and GFM is to be performed annually or at the termination of the contract, whichever occurs first.

Personnel who perform the physical inventory may not be the same individuals who maintain property records or have custody of the property.

Upon completion of the inventory, the Quality Manager will submit the following results to the QAR as appropriate:

- A listing with identified discrepancies, including overages, shortages, and damages that have been disclosed by the physical inventory.
- A written certificate to the effect that the physical inventory of CSP and GFM was completed on the given date and that the official contract records are in agreement with the physical inventory.

8.0 PRODUCT IDENTIFICATION AND TRACEABILITY

8.1. GENERAL

Materials and products will be identified by suitable means from receipt and during all stages of production, delivery, and installation. Methods of identification will be established locally and made a part of the local Quality Procedures Manual.

8.2. PROCEDURES

8.2.1. The initial phase of product traceability begins with the receipt of raw materials. Receiving department inspection will verify material conformance to applicable contract or purchase order requirements. All serviceable material will be clearly identified to indicate its suitability for release. Traceability must be provided to the contract or purchase order and maintained until delivery of the product to the production floor.

8.2.2. Materials on the production floor (components, subassemblies, assembled products, etc.) will be uniquely identified and traceable, as outlined in the local Quality Procedures Manual, to the job/work order.

8.2.3. The finished products will be packaged and marked in accordance with the contractual requirements. Unless excluded by contractual requirements, all FPI packaged products will be clearly marked prior to shipment to the customer to provide traceability to the location of manufacturer and the job/work order, or customer order number.

9.0 PROCESS CONTROL

9.1. GENERAL

Production, installation, and servicing processes which directly affect quality will be planned and documented to ensure that all work is performed in a controlled and uniform manner consistent with contractual requirements.

9.2. WORK INSTRUCTIONS

Written Work Instructions must be prepared for all processes that affect quality. These Work Instructions will be directly accessible to the personnel performing the work. The Work Instructions are to include:

- Step-by-step process instructions.
- Identification of materials, tools, and equipment required for each operation.
- Methods of monitoring and controlling process parameters, tolerances, and product characteristics.
- Identification of any applicable drawings, specifications, standards/codes, quality plans, and/or documented procedures.
- Criteria for workmanship which will be stipulated in the clearest practical manner (e.g., written standards, representative samples, or illustrations).
- Instructions for set-up and suitable maintenance of equipment to ensure continuing process capability.
- Approval signatures of the Factory Manager and Quality Manager.

9.3. SPECIAL PROCESSES

Special processes are those processes when results cannot be verified fully by the product’s subsequent inspection and/or testing. Deficiencies in such processes may become apparent only after the product is in use.

It is imperative that such processes are carried out under tightly controlled conditions and only by qualified operators.

All special processes must be identified in the local Quality Procedures Manual. The Work Instruction for any special processes must detail operator qualifications and any procedures for continuous monitoring and control of process parameters.

10.0 INSPECTION AND TESTING

10.1. GENERAL

The Quality Manager must establish and maintain documented procedures for all inspection and testing activities to verify that specified requirements for products and services are met. Required inspection and testing activities, and records to document the results, will be detailed in the local Quality Procedures Manual or in individual quality plans.

10.2. RECEIVING INSPECTION AND TESTING

10.2.1. Local procedures are to include:

- Step-by-step inspection and testing instructions.
- Description of inspection characteristics and acceptance/rejection criteria.
- Identification of tools and equipment required.
- Reference to any relevant standards or specifications.
- Methods of controlling incoming materials to ensure they are not processed or paid for until inspection and acceptance has occurred.
- Sampling plan requirements based on ANSI/ASQC Z1.4-1993, American National Standard, Sampling Procedures and Tables for Inspection by Attributes.

10.2.2. Exceptions

- When incoming materials are needed for urgent production purposes, only the Quality Manager may approve their release prior to receiving inspection verification. Methods for recording these occurrences, and identifying the materials involved, will be defined in local procedures.

- If rejection of a lot based on results of a sampling plan would cause curtailment of production, the Quality Manager may approve 100 percent sorting of the lot until a sufficient quantity of supplies has been segregated to assure continued production.

10.3. IN PROCESS INSPECTION AND TESTING

Local procedures will include:

- Step-by-step inspection and testing instructions.
- Description of inspection characteristics and acceptance/rejection criteria.
- Identification of tools and equipment required.
- Reference to any relevant standards or specifications.
- Methods of controlling in process material until required inspections and tests have been completed and materials found to be in conformance with requirements.
- Sampling plan requirements based on ANSI/ASQC Z1.4-1993, American National Standard, Sampling Procedures and Tables for Inspection by Attributes.

10.4. FINAL INSPECTION AND TESTING

10.4.1. Final inspection and testing is the Quality Manager's responsibility. Local procedures will include:

- Step-by-step inspection and testing instructions.
- Description of inspection characteristics and acceptance/rejection criteria.
- Identification of tools and equipment required.
- Reference to any relevant standards or specifications.
- Methods for controlling finished products to ensure that all specified inspections and tests have been performed and that the results meet specified requirements.
- Sampling plan requirements based on ANSI/ASQC Z1.4-1993, American National Standard, Sampling Procedures and Tables for Inspection by Attributes.

No product will be released for packaging or shipment until final inspection and testing has been performed and documented.

10.4.2. Finished Goods Reinspection

The Quality Manager, AW/SOI, and Factory Manager will inspect personally two items of finished goods from finished goods storage area monthly. Typical inspection characteristics should include:

- Conformance to specified requirements (dimensional, operational, etc.).
- Proper cleaning and packaging of product.
- Signs of deterioration or damage during storage due to improper handling.

The Quality Manager is responsible for documenting the reinspection findings and initiating any corrective actions needed.

10.5. INSPECTIONS AND TEST RECORDS

Local procedures for all inspection and testing activities will detail the format of required forms and records which provide evidence that the product has been inspected and/or tested and found to be acceptable. The individual responsible for releasing the product for final shipment will be recorded on the inspection/test records.

11.0 INSPECTION, MEASURING, AND TEST EQUIPMENT

11.1. GENERAL

The Quality Manager is responsible for preparing and maintaining a master listing of all inspection, measuring, and test equipment that can affect product quality. All equipment on this master listing will be controlled, calibrated, and maintained according to the procedures outlined in this section. These procedures do not override local institution security procedures relating to the control of test equipment, but should be used in conjunction with these local procedures.

11.2. CONTROL PROCEDURES

11.2.1. Procedures will be established and maintained for each piece of inspection, measuring, and test equipment on the master list prepared by the QA Manager. At a minimum, these procedures will specify:

- Step-by-step procedures for performing calibrations.
- Measurement standards and equipment to be used.
- Required accuracy of the Measurement Standard.
- Acceptance criteria.
- Action to be taken when results are unsatisfactory.

11.2.2. Measurement Standards used for calibrations will be supported by certificates attesting to the:

- description of the item,
- the calibration source,
- date of calibration,
- calibration assigned value,
- statement of uncertainty, and
- environmental conditions under which the calibration results were achieved.

Measurement standards will be traceable to the National Institute for Science and Technology (NIST) standards, and have the accuracy, stability, range, and resolution required for the intended use.

Unless otherwise specified in the order, the accuracy of the measurement standard must be at least four times more accurate (4:1) then the allowable tolerance of the equipment characteristic being checked, i.e., for an allowable tolerance of two percent the accuracy of the measurement standard will be 0.5 percent.

11.2.3. Inspection, measuring, and test equipment will be calibrated and used in an environment controlled to the extent necessary to assure continued accuracy, giving due consideration to temperature, humidity, vibration, cleanliness, and other controllable factors.

11.2.4. Calibration records will be maintained on each piece of inspection, measuring, and test equipment. These records will include:

- Complete equipment descriptions (model number, serial number, etc.).
- Equipment location.
- Calibration intervals.
- Dates and results of calibrations.
- Next calibration due date.

11.2.5. Prior to issuance for use, and when practical, all applicable measuring and test equipment will have a valid calibration status label. The label must clearly indicate acceptability for use and next calibration due date. Equipment may be recalled at any time during the calibration interval if the unit is suspected of being damaged, defective, or for any other special reasons.

11.2.6. The Quality Manager will establish calibration intervals taking into consideration such factors as:

- Type, purpose, and degree of usage.
- Manufacturers recommendations.
- Calibration history.

All intervals will be established in terms of calendar time, usage, or both.

11.2.7. All outside sources providing calibration services will meet the requirements of ANSI/NCSL Z540-1994. The vendor will supply a certificate of calibration and/or report with each instrument calibrated which contains the following information:

- Manufacturer Name
- Name of Instrument
- Model Number
- Serial Number
- Date Calibrated
- Description of any “out of tolerance conditions” discovered during the calibration of the instrument, and the action taken to correct it.

— Statement that the standards used for calibration are traceable to the NIST.

The requirements for calibration performed by NIST or the Department of Defense (DoD) calibration facilities do not require a statement of traceability.

11.2.8. Tamper resistant seals will be affixed to operator accessible controls which, if moved, will effect the equipment's calibration. This does not apply to equipment enclosure panels which must be opened and inspected for contraband. If the Quality Manager chooses to use tamper resistant seals on such panels, they will be applied after receipt by the Warehouse Foreman and prior to release to the floor. Tamper resistant seals will be unique in design and will be controlled and applied by the Quality Manager.

Equipment users will not use inspection, measuring, and testing equipment if the tamper resistant seal is broken or damaged in any way. Such equipment will be considered void of calibration and returned to the Quality Manager who will determine if the equipment is acceptable for use.

11.2.9. Any inspection, measuring, and test equipment found to be out of tolerance will be segregated and clearly marked to prevent improper use until the out-of-tolerance condition is corrected.

11.2.10. The Quality Manager will conduct a thorough investigation when equipment is found to be out-of-tolerance. This investigation will address any effect on material accepted during the calibration interval on the basis of out-of-tolerance equipment including notification to the customer when the out-of-tolerance condition is considered significant and the material in question was not subsequently checked with a serviceable piece of equipment.

12.0 INSPECTION AND TEST STATUS

12.1. GENERAL

The local Quality Procedures Manual is to define the means of identifying the inspection and test status (conformance/ nonconformance) of materials and products throughout production and installation to ensure that only products that have passed the required inspections and tests are dispatched, used, or installed. Examples of suitable means of identification include:

- Markings
- Authorized Stamps
- Tags (Job History, Reject, Rework, etc.)
- Labels
- Route Sheets
- Process Tickets

12.2. INSPECTION STAMPS

Inspection Stamps will be used to provide visible evidence of results of inspection activities (acceptance/rejection) on tags, forms, records, etc. These stamps will be issued only to inspectors whom the Quality Manager has trained and certified. Each stamp will uniquely identify the inspector to whom it is assigned.

A record of the assignment of all numbered stamps will be maintained and an inventory of all issued stamps conducted every six months including a physical impression of each stamp to ensure its legibility and suitability for continued use. Style and format of inspection stamps and records will be identified in the local Quality Procedures Manual.

13.0 CONTROL OF NONCONFORMING PRODUCT

13.1. GENERAL

Procedures for control of non-conforming material will be established and maintained locally and documented in the local Quality Procedures Manual. These procedures will ensure that products and materials which do not conform to specified requirements will be clearly identified (see Section 12).

Nonconforming material may not be further processed or shipped until the deficiency or satisfactory condition has been corrected. If practical, this material will be segregated from conforming material pending review and disposition.

13.2. REVIEW AND DISPOSITION OF NONCONFORMING PRODUCT

13.2.1. Receiving Rejection. The Quality Manager will examine material received from vendors found to be nonconforming during receiving inspection to confirm the nonconformance. The Quality Manager will notify the Purchasing Agent in writing of the details concerning the nonconforming materials. The Purchasing Agent is responsible for contacting the supplier to determine the disposition of these materials. Notification of disposition will be provided to:

- The Quality Manager
- The Factory Manager
- The Business Manager
- The Warehouse Manager

13.2.2. Preliminary Review and Disposition. Materials and products in process found to be nonconforming will be examined initially by the responsible foreman to determine if the nonconformance can be routinely eliminated by rework or requires scrapping. Local procedures and standards will define the criteria for these on-the-spot disposition decisions to the extent practical.

Both the Quality Manager and the responsible Foreman will review all other non-conforming materials and products to determine if it:

- Requires scrapping because it is obviously unfit for use and cannot be economically reworked or repaired.
- Can be resolved by rework to completely eliminate the nonconforming characteristic.
- Can be used for alternative applications.
- Requires return of the material to the supplier.

- Is repairable (with QAR concurrence if applicable). A repair procedure is distinguished from rework in that it reduces the effect of the nonconformance but does not eliminate it.
- Can be used as is (with QAR concurrence if applicable).

Upon completion of rework or repair, nonconforming material will be submitted for reinspection. If the nonconforming product is repaired or used as is, this decision will be documented on the appropriate inspection record.

13.2.3. Customer Returns. Both the Factory Manager and the Quality Manager will examine items returned by customers to determine disposition. All rework will be performed, inspected, and tested in accordance with written instructions.

All controls described in this Manual and required by local procedures apply equally to customer returned materials (i.e., corrective action, in-process inspection, final inspection, etc.).

1**3.2.4**. **Material Review Board Disposition**. In the event of a dispute between the Quality Manager and the Factory Manager regarding the disposition of a nonconforming product, the decision will be elevated to a Material Review Board (MRB). The MRB members will include, at a minimum:

- the Quality Manager,
- Factory Manager, and
- the AW/SOI.

Disposition by the MRB could include all those items listed in paragraph 13.2.2 above, or the request of a waiver/deviation from the customer.

14.0 CORRECTIVE AND PREVENTIVE ACTION

14.1. GENERAL

The Quality Manager is responsible for monitoring, coordinating, and recording all formal corrective and preventive actions. Actions will be consistent with the magnitude of problems identified and commensurate with the risks associated with failure to take the actions proposed.

- Corrective and preventive actions must address the root causes of nonconformity and potential nonconformity if they are to be effective.

- Any required changes to documented procedures, work instructions, or inspection instructions will be implemented and recorded by the responsible department head upon approval of corrective and preventive actions.

14.2 CORRECTIVE ACTION

14.2.1. On-the-Spot Corrective Action. On-the-spot corrective action may be initiated when a nonconformity is minor in nature and the root cause is easily identified and corrected, eliminating the need for more formal corrective action and follow up. All on-the-spot corrective actions will be recorded on the appropriate inspection record.

14.2.2. Corrective Action Request. When more formal corrective action is needed to identify and eliminate the root cause of non-conformities related to product, process, or quality system, the Quality Manager must initiate a Corrective Action Request (CAR). Situations which would typically result in the initiation of a CAR include:

- Repetitive on-the-spot corrective actions for the same characteristic.
- Recurring trends of customer complaints for the same problem.
- Significant and/or increasing scrap and rework costs for a specific defect category.

The decision to initiate a CAR is totally at the Quality Manager’s discretion. The appropriate department head will:

- investigate the cause of the identified non-conformities,

- identify and implement appropriate corrective action, and
- forward a written response to the CAR within three working days of its issuance.

Then, the Quality Manager will evaluate the corrective action and follow up to verify that the action has been taken and is effective.

14.2.3. Customer Complaints

Procedures for handling customer complaints are identified in Program Statement on Customer Service Center - UNICOR. Local procedures will establish responsibility for monitoring and following-up customer complaints.

14.2.4. FPI Form 31: Defective Work/Scrap Report. The Quality Manager will generate a Form 31 whenever the cost of a specific instance of scrap or rework exceeds the threshold for abnormal costs. The minimum threshold will be when the cost of a scrap/rework action exceeds $200 or 10% of the total planned cost of a job.

Lower thresholds may be approved locally by the AW/SOI. Requests to use criteria which exceed this threshold must be approved by the Corporate Quality Office. Form 31 thresholds will be identified in the local Quality Procedures Manual.

A Form 31 is not to be used to report cumulative scrap and rework costs over a period of time or over the life of a job. Scrap and rework costs which accumulate over a period of time should be tracked and reported in the monthly quality report.

Upon receiving a Form 31, the appropriate department head will:

- investigate the cause of the identified nonconformance,
- identify and implement appropriate corrective action, and
- complete the corrective action portion of the form.

The Form 31 will be returned to the Quality Manager within three working days of receipt for follow up to verify that the corrective action has been taken and is effective.

The Quality Manager will submit the Form 31 to the Business Office to ensure proper accounting for scrap and rework costs incurred.

14.2.5. Rejected Vendor Materials. When nonconforming materials are received from a vendor and the Quality Manager determines that vendor corrective action is required, he/she will notify the responsible purchasing official to issue a "show cause" notice to the vendor. This notice will request the vendor take corrective action to prevent the non-conformity's recurrence.

A written response is required from the vendor. Upon receiving the vendor's response, the Quality Manager will review it to determine if the action identified is adequate.

14.2.6. Government Representative Request for In-Plant Corrective Action. When a Government Quality Assurance Representative (QAR) issues a request for corrective action, the Quality Manager will investigate the deficient condition with the appropriate Department Head and help develop a corrective action plan to prevent recurrence.

The Quality Manager will follow up to verify that the appropriate corrective action has been taken and respond to the QAR's request for corrective action. Copies of the request and response will be sent to the appropriate Program Manager and the Corporate Quality Office.

14.3. PREVENTIVE ACTION

The ultimate goal of an effective quality system must be defect prevention rather than detection. It must provide a mechanism to continuously improve the process of manufacturing and service provision, improve quality and productivity, and thus reduce costs.

Quality must be built in to the product or service through well designed processes and effective training to minimize variation in the end results of processes. An effective quality system lessens the need for multiple inspection points which drive up costs and inhibit product flow.

14.3.1. Suggestion Program. The Quality Manager will establish and maintain a suggestion program to provide an opportunity for all FPI staff and inmates to identify opportunities to improve operations.

The format of corrective action suggestion forms and specific procedures will be determined locally and identified in the local Quality Procedures Manual.

Copies of suggestion forms will be readily available and suggestion procedures will be clearly posted in an area accessible to inmates. Individuals whose suggestions are adopted will be appropriately recognized and rewarded.

14.3.2. Quality Action Team. Each factory will have a Quality Action Team (QAT) to implement and maintain a preventive action program. Members of the QAT will include:

- AW/SOI
- Factory Manager
- Quality Manager
- Other FPI Staff selected by the AW/SOI
- Inmates selected by the AW/SOI

The objective of the QAT is to continuously improve operations by identifying and resolving problems and potential problems. The AW/SOI, Factory Manager, and Quality Manager are permanent members of the QAT. Other staff and inmates selected by the AW/SOI should be rotated occasionally to provide increased familiarity with the continuous improvement process. The QAT will meet at least once every two months.

Ideas for process improvement will be developed by reviewing quality cost reports, defect analyses, and customer complaints to identify areas of high potential payoff, adverse trends, and recurring non-conformities. When a problem has been identified as a candidate for formal problem solving, the QAT will:

(1) **Define the problem:** Each problem will be defined as specifically as possible.

(2) **Prepare process flow chart:** Observe the process and prepare a process flow chart to understand better where the problem is most likely occurring.

(3) **Define, collect, and analyze data:** Develop check sheets to understand graphically when and where problems are occurring and Pareto analyses to further understand the magnitude of the problem.

(4) **Identify potential causes of the problem:** Brainstorm to define as many potential causes as possible. Cause and effect diagrams are very useful tools to assist in this process.

Potential causes may include:

- training,
- environmental factors,
- equipment,
- methods, or
- materials.

(5) **Determine recommendations:** Recommended solutions will be based on the identification of the most likely causes of the problem.

(6) **Implement corrective action:** Corrective actions will be delegated to the appropriate department heads for implementation. The Quality Manager will follow up to verify that the recommended actions have been taken.

(7) **Review results and revise as needed:** Return to step (3) and determine if the actions implemented have resolved the problem. If not, develop alternative recommendations and implement additional corrective actions until the desired improvement is achieved.

Corrective action recommendations will be recorded in the QAT meeting minutes with copies distributed to all local FPI staff. Results of preventive action activities will be discussed at the monthly Operations/Financial Review meetings. (See 1.3.3)

15.0 HANDLING, STORAGE, PACKAGING, PRESERVATION, AND DELIVERY

15.1. GENERAL

Procedures for handling, storage, packaging, preservation, and delivery of materials will be established and maintained locally and documented in the local Quality Procedures Manual.

The handling, storage, packaging, preservation, and delivery of materials and products will be in accordance with the contractual requirements or drawings/specifications issued by the PSC. Absent these requirements, the local standard operating procedures and process instructions will apply.

15.1.1. Handling. Materials and products will be handled appropriately to prevent damage and/or deterioration. Appropriate product protection may require the use of:

- Pallets
- Specialized Containers
- Work Platforms
- Conveyors and other automated transfer systems
- Pallet Jacks, Fork Lifts and other vehicles

Handling procedures will be documented in work/process instructions.

15.1.2. Storage. Designated areas (warehouse, shop stock, etc.) will be used for storage of raw materials, subassemblies, and finished goods to prevent damage and/or deterioration pending use or delivery. These areas will be detailed on the local plant layout.

Receipt to and dispatch from such areas will be authorized through:

- automated pick-lists,
- manual requisitions,
- shipping documents, or
- other automated means as stipulated in Financial Management policies.

The condition of materials and product in stock will be assessed during internal quality audits (See Section 17).

15.1.3. Packaging. Packing, packaging, and marking will be in accordance with contractual requirements, PSC drawings/specifications, or local instructions as applicable. All finished goods must be cleaned thoroughly in a manner

appropriate for the type of product. At a minimum, items will be free of dust, dirt, and other contaminants. Packaging and marking will be inspected as either a characteristic of final inspection or as a separate inspection process. A copy of the "FPI Escape Proof Guarantee" card or label will be included in or attached to the unit shipped.

15.1.4. Preservation. Staff responsible for designated storage areas will ensure the maintenance of the storage environment to prevent damage or deterioration of materials and products.

Warehouse personnel will conduct monthly inspections of all materials with a limited shelf life and document the results. Materials with an expired shelf life will be identified and segregated as nonconforming (See Section 13).

15.1.5. Delivery. Shipping staff will ensure that outbound trailers are properly loaded to guarantee the protection of finished products. Shipping procedures will identify responsibility for ensuring customer delivery requirements (inside delivery, prior notification, installation, removal of debris, etc.) are communicated clearly to the transportation provider.

The Quality Manager will monitor the performance of transportation providers and recommend corrective measures to the appropriate staff when warranted.

16.0 CONTROL OF QUALITY RECORDS

16.1. GENERAL

Quality records provide evidence of conformity with specified requirements and effective operation of the quality system. Pertinent records include documents such as:

- Inspection Records
- Test Reports
- Corrective Action Requests
- Customer Complaint Reports
- Internal Audit Reports
- Calibration Records
- Vendor Quality Records

Quality records will be legible, readily retrievable, and stored in a manner to prevent loss, deterioration, or damage.

16.2. PROCEDURES

The Quality Manager will establish and maintain documented procedures for controlling quality records, to include:

- Identification
- Collection
- Indexing
- Access
- Filing
- Storage
- Maintenance
- Disposition

These procedures will define retention times of quality records. Records which document the results of inspection or test activities will be maintained not less than three years, or as required by customer contract. Retention and disposition of government records are governed by the National Archive and Records Administration (NARA) General Record Schedule.

17.0 INTERNAL QUALITY AUDITS

17.1. GENERAL

Internal Quality Audits are conducted to determine compliance with this policy and local procedures, and to ensure the quality system's effectiveness.

17.2. PROCEDURES

The Quality Manager will develop internal quality audit checklists to verify compliance with the local Quality Procedures Manual.

Internal quality audits are to be coordinated by the Quality Manager and must be performed at least every six months. Audits may be conducted in monthly or quarterly segments, provided all audit elements are checked within the six month cycle.

Internal audit steps should include such things as:

- Review of a random sample of quality records for proper application, preparation, storage, and retention.
- Review of a random sample of work/process instructions for clarity. Do they include all required elements? (See Section 9).
- Observation of operations to determine compliance with work/process/inspection instructions.
- Interview of staff and inmates to determine accessability to and familiarity with work/process/ inspection instructions.
- Review of customer complaints and quality costs to highlight potential weaknesses in the quality system.
- Review of materials in production for proper indication of inspection and test status.
- Review of storage areas for proper handling and storage of products.
- Review of training records of production workers and inspectors for timely completion of required training.
- Review of Corrective Action Requests for timely completion and follow-up.
- Review of customer complaints for appropriate action and timely follow-up.
- Review of controls and calibration of measuring and test equipment.
- Review of random sample of contract review records for compliance with defined procedures.

- Review of documents (drawings, specifications, work/inspection instructions, quality manuals) for compliance with document control procedures.
- Review of random sample of purchase requests for evidence of approval by Quality Manager.

Selection of audit elements and frequency of audits will be based upon the status and importance of the activity being audited and the inherent risks associated with failure to comply with documented procedures.

The AW/SOI selects internal audit team members. Audit team members will only audit activities for which they are not directly responsible. Upon completion of audits, the Quality Manager will prepare a report of findings and submit it to the AW/SOI with copies to all FPI managers.

Within three working days of submission of the internal audit report, managers will provide a written response to the AW/SOI and Quality Manager identifying corrective actions taken to resolve any deficiencies found in their areas of responsibility.

Within 30 days of submission of the audit report, the review team will reconvene to determine the effectiveness of the corrective actions taken. The Quality Manager will submit a final report of closure to the AW/SOI when all findings have been corrected.

18.0 TRAINING

18.1 GENERAL

Personnel performing activities affecting quality will be qualified on the basis of appropriate education, training, or experience as identified by local and agency standards.

Supervisors of staff and inmates are responsible for identifying and providing the training needs of all personnel under their supervision. Appropriate records of training will be maintained.

18.2 QUALITY TRAINING

18.2.1. Staff. Quality Managers, Specialists, Trainees, and alternate Quality Managers will complete the Quality Managers Self Study Course within four months of assignment. Course manuals will be obtained from the PSC by request through the institution Employee Development Manager. The AW/SOI may assign the course as a routine developmental activity for other employees.

The PSC Manager is to ensure that the course is updated and distributed to UNICOR manufacturing sites.

Newly selected Quality Managers will have the opportunity to observe and be taught all aspects of the Quality Program at another FPI manufacturing facility with a similar product line within six months of reporting for duty. It is recommended that the duration of this training be at least one week. This will be funded by the local UNICOR factory.

Requests for this training will be made by the Quality Manager to the AW/SOI, who will coordinate the training through the Corporate Quality office.

18.2.2. Inmate Training. The Quality Manager will develop, implement, and maintain a written training program for all inmate inspectors to include, but not be limited to, the following:

- Familiarization with the Quality Program Manual.
- Local Quality Procedures Manual.
- Written Standard Operating Procedures for each inspection station.
- Classroom training.
- Training aids for measuring and testing equipment.
- Documentation of inmate’s training progress.
- Testing on course content.
- On-the-job training.

— Post training monitoring as appropriate.

18.3 OTHER TRAINING

18.3.1. Staff. Procedures for identifying and providing training are contained in the Employee Development Manual. All staff are responsible for their own career development, and are encouraged to seek out continuing education courses or other job related training to enhance their job skills.

The PSC conducts an annual assessment of the technical training needs of the Corporation and publishes a schedule of training classes offered. Staff will submit requests through the AW/SOI to the PSC to attend these classes.

18.3.2. Inmates. Department Supervisors will establish and document the minimum education, training, and/or experience required for each inmate position under their supervision. They must maintain records of completed training as appropriate. The extent and formality of the training required is dependent on the complexity and/or critical nature of the process as it relates to quality.

19.0 SERVICING

19.1. GENERAL

Servicing is the after-sale attention provided on FPI products. When servicing is a specified requirement, local procedures will be established and maintained for performing, verifying, and reporting that any servicing provided meets the specified requirements.

20.1 STATISTICAL TECHNIQUES

20.1 GENERAL

Statistical techniques are sometimes used to establish control and verify process capability and product characteristics.

Statistical techniques are also used to:

- establish sample sizes,
- detect quality trends, and
- establish priorities for corrective action (See Section 14).

20.2 PROCEDURES

20.2.1. Statistical Process. The Quality Manager will identify the need for statistical techniques, such as Statistical Process Control (SPC), as established by contractual requirements or local need. Where SPC is used, detailed procedures will be documented in the process/work instructions (See Section 9).

20.2.2. Statistical Analysis. The Quality Manager will establish a system to gather information concerning process or product defects and associated costs. This information will be analyzed to perform trend analysis and identify statistically significant opportunities for process improvement. Appropriate statistical techniques include, but are not limited to:

- Control Charts
- Pareto Charts
- Histograms
- Scatter Diagrams
- Line Graphs
- Cause/Effect Diagrams

Appropriate data for analysis includes, but is not limited to:

- Frequency of nonconformity by defect category.
- Cost of nonconformity by defect category.
- Customer Complaints.

20.2.3. Statistical Sampling. Statistical sampling of inspection lots or batches will be in accordance with contractual requirements. Absent contractual requirements, an appropriate sampling plan, as outlined in ANSI/ASQC Z1.4, will be used.

Inspection levels and Acceptable Quality Levels (AQL) appropriate for the production and inspection activity will be:

- established locally,
- identified in inspection instructions, and
- documented in inspection records.